Meeting Minutes

for the 2nd expert meeting of IHRA pedestrian protection
3 - 5 March 1998, Washington

Day 1 (Tuesday 3 March) National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, U.S.A.

1. Opening of the meeting

The meeting Convener, Mr. Mizuno opened the meeting at 10:00 and Mr. Owings with NHTSA welcomed delegates by stating a need for this harmonized activity for pedestrian protection, making reference to the current pedestrian accident fatalities in the State. (Doc. IHRA/PS/36)

2. Roll call of delegates

(See attached sheet Appendix 1)

3. Adoption of meeting agenda

The body approved the agenda, Doc. IHRA/PS/48, without change.

4. Report on 3rd IHRA committee meeting

The Convener reported a decision concerning membership of Experts Meeting made by IHRA Steering Committee held in Nov 1997, i.e. three OICA's members (one each from Europe, US and Asia Pacific respectively) are able to participate in the Experts Meeting, while Industries can't join the IHRA steering committee itself.

The Convener introduced a recommended interpretation given by the Steering Committee on "Passenger Vehicle" as "vehicle with GVM not exceeding 4.5metric tons and accommodation of up to 9 occupants.

5. Pedestrian safety information from member countries

Mr. Janssen briefly explained the history on pedestrian protection research and legislation in Europe. (Doc. IHRA/PS/37)

Mr. Janssen also introduced the discussion on "bull-bar" directives prescribes a need for test procedure and legislation in EU proposed by EU Commission, and he spoke of its uncertainty how to incorporate "bull-bar directives into ongoing "pedestrian directives" to realize all in one by either way of revising the existing

directives on “exterior projections” or looking to maturity of “pedestrian directives in progress”.

CONCLUSION 1:

In spite of its significant issue, the body felt that IHRA Working Group should focus on vehicle as produced, and that the test procedure for "bull-bar" should be discussed further at the later stage as a secondary issue, looking at the different status and requirements from each country.

Mr. Janssen outlined the task and schedule EEVC Working Group 17 is going to conduct, and indicated the crucial points under discussion that number of pedestrian injured by bonnet leading edge has been decreased due to allegedly recent change of car shape, and that EEVC acceptance levels with regard to bonnet leading edge test will be increased. (Doc. IHRA/PS/38)
Working Group is to review the test procedures by WG10 and to propose the final report around Oct '98 based on new data, accident statistics, biomechanics and test results.

Mr. Janssen also outlined the exchange of views at the 89th meeting of Working Group on Motor Vehicles Brussels held in January '98. He understood that Commission DG3 suggested to wait for input from EEVC until Oct '98, and that Commission acknowledge the need for satisfactory test tools, but suggesting a compromise by using test tools ready to hand so as to get some started. Further decision, if any, will be made after internal discussion within Commission.
(Doc. IHRA/PS/39)

Mr. Lawrence summarized MIRA cost-benefit study, which was submitted to EU Commission in February, drawing the main conclusion that “cost to benefit ratio” is to be 5.3:1 as the least upper bound and 32.3:1 as greatest lower bound in terms of profit. He also made an assessment of study, pointing problems out on both benefits and costs analysis. (Doc. IHRA/PS/35)

Mr. Marous, graduate student, briefly explained a non-frangible pedestrian legform impactor under development which has been funded by NHTSA, in accordance with ISO Committee Draft, and practical testing of the legform impactor is to be completed in September '98. (Doc. IHRA/PS/43)

Mr. McLean introduced their current studies under his research unit, i.e. child headform impactor v.s. "Bull Bar", and EEVC's adult headform impactor v.s. top 10 models of passenger cars on the market.

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6. Latest Report of Accident Survey from member countries

Ms. Isenberg briefly outlined PCDS (Pedestrian Crash Data Study) stating the background, framework and new set up for data collection etc. (Doc. IHRA/PS/44)

Ms. Jarrett presented the current status of U.S. pedestrian analysis in comparison with PICS (Pedestrian Injury Causation Study) and data results collected in a manner of PCDS which was structured in 1994, and investigated 292 cases to date.

(Doc. IHRA/PS/45)

Mr. Bartolo introduced an article extracted from magazine analyzing circumstances and injuries in 217 pedestrian traffic fatalities in Seattle from 1990-1995.

(Doc. IHRA/PS/34)

Mr. Sasaki gave a presentation concerning injury data in Japan making comparison between old data collected during 1987-1988 and new data during 1993-1997 by matrixes which shows correlation between contact location and pedestrian body region as a function of age group, i.e. "all age group / up to 15 / 16 or over". (Doc.IHRA/PS/26)

Mr. Ishikawa interpreted Mr. Sasaki's presentation as follows;

1. Relative number of injuries (whole body region) hit by bonnet leading edge has been drastically decreased.
2. Knee injury dropped to only one case in new data, while 15 cases in old data.
3. Chest injury rather increased than old data.
4. Major head contact location has changed from bonnet to windscreen / its surrounding area incl. A pillars.

The member, however, raised a question with respect to the frequency (3 cases)

that “head” contacts “front bumper” out of his matrix, i.e. why does “head” contact “front bumper” of cab over engine type vehicle. (Doc.IHRA/PS/26)

CONCLUSION 2:

Mr. Sasaki and Mr. Ishikawa were asked to look into the data again.

Mr. McLean briefly reported test results of polyethylene bull bar in comparison with steel bar etc, stating that polyethylene bar named "smart bar" showed very low HIC value by horizontal test. He also introduced that they are investigating and reviewing reports on the pedestrian accident in south Australia since last 70's for 20 years.
(Doc. IHRA/PS/46)

Mr. Janssen reported summary on pedestrian accident survey in Europe, referencing French, German and UK's studies, and indicated the following common factors in Europe as a conclusion;

1. Whole car front incl. EEVC test area are still important.
2. Priority of impact locations at a speed of 40km/h or less must be bumper > bonnet > bonnet leading edge.
3. Decrease in number of pedestrian injured by bonnet leading edge of modern cars is probably caused by recent design with lower front.
4. Considering pelvis/upper leg injuries of elderly pedestrians, elderly people should be categorized in different from adult.

Mr. Janssen indicated a need to integrate accident data (impact location, body region, age, car model etc) into the common format, referencing the sheet of matrix which shows correlation between contact location and pedestrian body region as a function of age group. (Doc. IHRA/PS/47)

CONCLUSION 3:

The body agreed to try to fill the basically common format with data from each country / area following the format presented by Japanese delegates by the next meeting scheduled in mid Sept under the condition that vehicle models are desirable to be as new within 5 years as possible, and that vehicle speed should be specified, and that injury level should be AIS2+, if circumstances allow.

Day 3 (Thursday 5 March) National Highway Traffic Safety Administration

7. Test procedures

The Convener raised a question, if it is appropriate or not that "passenger vehicle", in answer to the recommended interpretation given by the Steering Committee, shall be the vehicle with GVM not exceeding 4.5metric tons and accommodation of up to 9 occupants. This issue was not concluded, but the body felt that the vehicle with GVM not exceeding 4.5metric tons is too heavy, and agreed for the present that WG suggests 2.5metric tons in place of 4.5metric tons to the Committee.

The Convener asked for recommendations on which body region this Working Group should give priority to out of logical accident data presented by each countries.
A lengthy discussion followed and the group agreed to give priority to injury frequency and severity.

CONCLUSION 4:

The body agreed to deal with three area (1) Adult head (2) Child head (3) Adult leg as general common factors, and to start on drawing the test procedures up, utilizing existing studies in ISO / EEVC, and further with additional tools by computer modeling like “MADYMO”. The discussions on the other body regions (chest / pelvis / femur) and additional crucial contact locations such as “windscreen incl. A pillars” were to be carried over for an open discussion until the next meeting.

CONCLUSION 5:

The body provisionally assumed from both ISO and EEVC’s test procedures that vehicle speed is to be taken for 40km/h or less. This topic also shall be carried over until next meeting for finalization.

The Convener requested particularly accident data as to “windscreen incl. A pillars” vs. head (injury severity level) from each member for further discussion, if “windscreen incl. A pillars” would be included or not, because A pillars of recent cars have an inclination to be streamlined and slanted deeply to the horizontal line.

Mr. Ishikawa indicated, in answer to Mr. Saul’s query on computer modeling, that

we have to be deliberate in making use of the modeling like "MADYMO" to the test procedures, since it still remains imposed restrictions and highly sophisticated technical problems (friction problems etc) unresolved, having learned from computer simulations so far.

CONCLUSION 6:

Mr. Ishikawa will be prepared to introduce simulation results at the next meeting, if circumstances allow.

NEXT MEETING:

The next IHRA experts meeting is provisionally scheduled around mid September before IRCOBI in Paris or Brussels. The venue is to be confirmed by Ms. Brun-Cassan / Mr. Jaehn. Time frame is to be 2 days and a half.

Adjournment:

The Convener thanked all members for attending and adjourned the meeting at 14:20, 5 March.